ABSTRACT OF THE DISCLOSURE

A method for storing data in a random access memory (RAM) in which data words are storable with a predetermined number of data bits, involves an encryption of each data word before storage in the RAM, where a permutated data word with a predetermined number of data bits is generated from each data word or from a data word derived therefrom, by a one-to-one rearrangement or permutation of the individual data bits using a first permutation key. The individual data bits of the permutated data word are substituted using a first substitution key before storage, where the data word encrypted by permutation and subsequent substitution is stored in the RAM. Alternatively, the data bits of the data word to be encrypted may be substituted before the permutation using a first substitution key, and the data word obtained from the substitution and subsequent permutation as the encrypted data word may be stored in the RAM. The encryption of the individual data words is preferably performed in the same chip in which the processing unit that processes the data words is integrated. The data words transferred externally from this chip to the RAM for storage are provided in encrypted form and are thus protected against interference effects or unauthorized tapping of the data.